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ing inquiry; had photographs taken of numerous portraits bearing on the question; carried on a correspondence with experts in Europe; and finally established beyond doubt the fact that the portrait was not of Ambroise Paré, but of another practitioner of a certain reputation, but by no means so great a name as the illustrious surgeon's of whom it had been thought to be a likeness.

Dr. Bigelow was, unquestionably, a man of true genius. Sagacity in divining the truth; the power of continuous, patient, and searching investigation; inexorable determination to have the truth, if nature could be forced to yield it, characterized his powerful intelligence. The record of his printed publications is not a very long one, but it is weighty with original thought and practical discovery. He inherited a distinguished name, and his labors have rendered it memorable and illustrious, — one of the brightest in the annals of American surgery, — not to claim for it a still higher place in the history of the healing art.

Dr. Bigelow was married in 1847 to Susan, daughter of the Hon. William Sturgis. She died on June 9, 1853. One son, William Sturgis Bigelow, survives his parents.

## CHARLES OTIS BOUTELLE.

CHARLES OTIS BOUTELLE was born in Lexington, Massachusetts, August 4, 1813. His grandfather was an officer who served honorably throughout the Revolutionary War. His father, a skilful physician and a man of brave and earnest temperament, was a surgeon in the Navy during the war of 1812. His mother, a daughter of General Nathaniel Goodwin, of Plymouth, who served also during that war, was a woman loved and revered by all who knew her. She lived to nearly the age of one hundred, and her son never ceased to mourn her loss.

With such ancestry, many features of Mr. Boutelle's character can be traced to their source. Having while yet at an early age lost his father, he was educated by his uncle, the Reverend Ezra Shaw Goodwin, of Sandwich, Massachusetts, and received from him a thorough training in both the classics and mathematics. It soon became necessary for him to earn his own living; so he taught school, studied surveying, and one day, having heard that a friend who owned a work on that subject was willing to lend it to him, he walked twenty miles to get it. His skill in practical surveying soon became known, and a place was given to him on the survey of his native State by its director, Simeon Borden.

Having served creditably as Mr. Borden's chief assistant, he was appointed by Alexander Dallas Bache, Superintendent of the U. S. Coast Survey, to a position upon that work, in January, 1844. His service was at first in the office, but his active temperament and robust physique demanded less sedentary occupation, and his special capabilities for the field were quickly recognized by his distinguished chief. His advancement was rapid. In 1846 he was made an assistant in the Survey, and from that time forward gained steadily in standing on the work, being intrusted with the charge of important operations, which he conducted with his accustomed energy, and with the professional skill and fertility of resource always at his command.

For some years he carried on the reconnoissance for the primary triangulation upon the coast of Maine. He made the reconnoissance and selection of sites for three primary base-lines, and had personal charge of the measurement of a primary base-line (the Atlanta base) in Georgia. This measurement was three times repeated as a test of accuracy, the line being measured twice in winter and once in summer, with an accordance of results so close that the greatest divergence did not exceed a millionth part of the whole length of nearly six miles. He conducted the primary triangulation which was carried from the Atlanta base northward and northwestward along the Blue Ridge, to connect with the primary triangulation which was advancing southward and southwestward from the Kent Island base, and had charge of the surveys upon the coasts of South Carolina and Georgia.

During this period the bent of his mind was shown by the improvements he introduced into the methods and processes of the work; among these may be mentioned the form of preliminary base apparatus described in the Coast Survey Report for 1855; his form of tripod and scaffold observing signal, 1855; his experiments with lights for geodetic night signals, carried on for several years, and brought to a successful termination in 1880 by the adoption of the magnesium lights and the student-lamp reflectors.

In 1884 the charge of the Coast and Geodetic Survey office was assigned to him, and after his relief from that duty he was placed in immediate supervision of geodetic operations in the States which had organized their own geological and topographical surveys.

For a number of years he was a member of the board of commissioners for the improvement of the harbor of Norfolk.

On February 16, 1884, soon after taking up his residence in

this city, he was elected a member of the Philosophical Society of Washington.

No notice of Mr. Boutelle's life would be complete that should omit reference to the important services which he rendered to his country at a critical period of its history. In common with the great majority of his brother officers assigned to duty with the military and naval forces, he participated in the hardships and dangers of the civil war. Soon after the outbreak of hostilities he was assigned to the command of the steamer Vixen and schooner Arago, as hydrographic officer of the South Atlantic Squadron, serving under Admirals Dupont and Dahlgren, and Commodore Lamman, U. S. N. This duty lasted throughout the war, and it devolved upon him the responsibility for the safety of navigation of the squadron along its entire cruising ground. With what patriotic devotion and professional ability this service was rendered, the records of the civil war amply attest.

Admiral Dupont, in his report to the Navy Department of the capture of Port Royal, refers to the fact that all aids to navigation had been removed by order of the Confederate authorities, and acknowledges the able assistance of Captain Boutelle in sounding out and buoying the channel, and thus enabling the squadron to advance to the attack.

General W. T. Sherman, U. S. Army, commanding the land expeditionary force, concludes a report, dated November 8, 1861, as follows: "It is my duty to report the valuable services of Mr. Boutelle, assistant in the Coast Survey. . . . His services are invaluable to the army as well as to the navy, and I earnestly recommend that important notice be taken of this very able and scientific officer by the War Department."

Personally, Captain Boutelle (as he was known to his friends after the civil war) was a man of varied reading and a most retentive memory, genial and witty in conversation, of uniform kindness of heart, and of a generous and hospitable nature, always assuming that others were guided by motives as unselfish as his own.

He combated manfully the advances of age and the inroads of disease, and it was not until the approach of his seventy-eighth year that, yielding to the solicitations of his family and friends, he sought relief from active duty. He died on the 22d of June, 1890, at the home of his son, Dr. Boutelle, in Hampton, Virginia.